

# *Virginia* WILDLIFE

OCTOBER, 1954

VOLUME XV    *Price 15 cents*    NUMBER 10



*Fish & Wildlife Service photo by Rex Schmidt*

Modern archery is gaining momentum steadily in America—especially in the hunting field. This is a good sign, for archers are sportsmen and conservationists. They enjoy great sport and, admittedly, kill little.

# Virginia WILDLIFE

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, Richmond 13, Virginia  
A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and  
Related Natural Resources, and to the Betterment of Hunting and Fishing in Virginia

## COMMONWEALTH OF VIRGINIA



THOMAS B. STANLEY, Governor  
Commission of Game and Inland Fisheries

### COMMISSIONERS

BEVERLEY W. STRAS, JR., *Chairman*, Tazewell  
I. T. WALKER, JR. . . Norfolk DR. E. C. NETTLES . . Wakefield  
FRANK P. BURTON . . Stuart HOLMAN WILLIS, JR. . . Roanoke  
WM. C. GLOTH, JR. . . Redart DR. W. B. RAINS . . . Warsaw  
T. G. HERRING . . . Dayton T. D. WATKINS . . . Midlothian  
HOMER G. BAUSIRMAN . . . . . Arlington

### I. T. QUINN

*Executive Director*

### EVELYN P. RUEGER

*Assistant Executive Director*

### DIVISION CHIEFS

CHESTER F. PHELPS . . . . . Game  
G. W. BULLER . . . . . Fish  
LILLIAN B. LAYNE . . . . . Fiscal  
J. J. SHOMON . . . . . Education  
WEBB MIDYETTE . . . . . Law Enforcement

VOLUME XV OCTOBER, 1954 No. 10

### In This Issue

	PAGE
Editorial—The Mellowness of October	4
Our Growing Water Needs — and what we can do about it	5
Mourning Dove	8
Green Gold in Them Thar Hills	10
Conservationgram	13
Nature's Bountiful Cupboard	14
Coonhounds—Pets or Hunters?	16
Early Naturalists in Virginia	18
A Negative Approach to Game Abundance	20
The Drumming Log	24
Field Force Notes	26
Wildlife Questions and Answers	27

### Cover

*Commission photo by Kesteloo*

The beagle is one of America's best loved dogs. Friendly, intelligent and sturdy, this clamorous dwarfed hound was first used in hunting rabbits in the New World in 1642. Perhaps no group of dog owners is more devoted to their canine clan than the beagle fanciers of America.

PUBLICATION OFFICE: Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia

Editor: J. J. SHOMON

W. C. KEILNER, *Associate Editor*

L. G. KESTELOO, *Photography*

FLORENCE BLANKENSHIP, *Circulation*

SUBSCRIPTIONS: One Year, \$1.00; two years, \$1.50; three years, \$2.00. Remittances by check or money order to be made payable to the Treasurer of Virginia. Local game wardens will accept subscriptions or they may be forwarded direct to Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia.

VIRGINIA WILDLIFE is published monthly at Richmond 13, Virginia, by the Commission of Game and Inland Fisheries, 7 North Second Street. All magazine subscriptions, change of address notices, and inquiries should be sent to the Commission, P.O. Box 1642, Richmond, Virginia. The editorial office gratefully receives for publication all news items, articles, photographs, sketches, and other materials which deal with the wise use and management and study of Virginia's inter-related, renewable resources: soils, water, forests and wildlife. Since wildlife is a beneficiary of the work done by state and federal land-use agencies in Virginia, editorial policy provides for full recognition of their accomplishments and solicitations of their contributions. Credit is given on material published. Permission to reprint is granted provided proper credit is given the Virginia Commission of Game and Inland Fisheries and VIRGINIA WILDLIFE and proper clearances are made with authors, photographers, artists and publishers.

Entered as second class matter, November 10, 1947, at the post office in Richmond, Virginia, under the act of August 24, 1912

# The Mellowness of October

LIKE April when nature bursts forth with all splendor, October is an outdoor month—only more so. April and May are months of freshness and birth, but October combines the mellowness of all the months of the year—the awe of spring, the mixed cacophony of summer, the warm afterglow of autumn, the foreboding chill of winter.

If someone were to ask me for my favorite month, I would have to pick October, and I'd have plenty of company. The wildlife of the fields and woods love it, even the fish commence to bite better, and man himself then stands upon the threshold of the year.

Colorful October is the month of all months when the artistry of mother nature reveals its most beautiful paintings and brings its passing picture book to a dramatic climax.

What pigments are used, what techniques are employed and followed to make October what it is, only the Great Painter himself can disclose. Botanists give us a partial answer but not the complete answer, and with this explanation we must be satisfied. The more mysterious hidden secrets of plant physiology must remain locked forever in the book of the unknown, for to know all the answers to plant existence is to know the mystery of life itself.

To know about October colors we must go back again to springtime and chlorophyll, the green pigment that most plants possess in the leaf, and through which, by the magic of photosynthesis, food is manufactured. Chlorophyll is made of several pigments. Along with the two green chlorophyll pigments in the leaves there are also yellow pigments—the carotene and the xanthophylls. These are masked by the chlorophyll. When nights are cold, but not necessarily frosty, and the days are mild and sunny chlorophyll fades and the yellow pigments become prominent. The condition in the leaf inhibits the daily transfer of the small amount of sugar formed; hence, there is some accumulation in the leaf. Through chemical changes in the leaf, associated with the sugars, red or bluish anthocyanin pigments appear. The varying combination of these pigments in leaves of different kinds of plants gives us the glorious pageant of October. The sombre brown color of the leaves of some plants is due to tannin within the leaf.

So it is the fading of chlorophyll and the accumulation of sugars and the various pigments (carotene, xanthophylls, anthocyanins) which impart the bright colors to October foliage. More than this is little known. But why worry? Isn't it sufficient that autumn colors are beautiful and both man and everything that walks on earth are affected?

Take the cricket, for instance. His rhythmic chirpings in the eaves are now slowed to an occasional "errrrp." His day is done. The wriggling red worm who so relentlessly tried to escape the summer angler or the ravenous robin inches deeper in the cool subsoil, safe once more.

The bobwhite quail in the lespedeza patch are grown, the young and old banding together in a single covey, and all twittering joys of delight over bountiful seeds of beggarweed and bright-colored berry bushes. The barking gray squirrel in the hickory tree, or it may be an oak tree just as well, rushes around hiding the winter food supply in some wooden storage box. The raccoon and woodchuck and black bear just eat and eat to put on a cold weather supply of hog fat, important excess calories that will be exhausted long before the warming rays of the March sun get started. The elusive red fox feels the cool night air again and flexes his spirited legs. Woe to the Walkers who would give him chase again.

The ducks and geese of the northern marshes awaken to an inner urge and take off with their full-grown young for parts further south where the days are warmer and the food more long-lasting. Up they go from the water-courses, hundreds, thousands, some in scattered flocks, some in great skeins like the Canadas, to parts far and wide over the continent. It's a windy night, clear, and the moon is a golden pancake. Can you hear the honking of the big birds? Can you mark their direction? You'd better. They won't tarry long. They'll be over some dark cornfield in a minute and, like the autumnal wind, their voices will soon remain but an echo in your memory.

October is a kind of drinking month. Not in the sense that we generally speak of drinking today, but in the sense of sipping, like a bee that sips nectar from a blossoming dahlia. It is a month for sipping and enjoying the best that comes in nature—the mellowest wine of all the months—flowers, fragrance, fruits, fall foliage, frost-work. As one astute observer of nature put it last year "and anyone who isn't dinking of it deeply right now is a salesman for sour grapes."—J. J. S.



Our consumption of water has increased many fold during the last quarter century.

# Our Growing Water Needs— and what we can do about it

By DONALD S. WALLACE  
*Division of Water Resources,  
Department of Conservation and Development*

**W**ATER, water resources, water conservation. Those words have more meaning to many people who a decade ago gave little thought to the place water plays in the economy of our state. The Commonwealth of Virginia is fortunate in having great resources in water but these resources are not distributed always where the need is greatest. We are blessed with good rainfall which normally occurs fairly regularly each month but often there are heavy storms with torrential rain which causes damaging floods and often the opposite condition prevails with little or no rain and resultant droughts. During recent years we have had severe droughts—these have caused large losses to agriculture and much concern to those who provide water to municipalities and industries. Extreme floods have inundated farm lands, valley towns and industrial plants. Although we have had localized floods during the past three or four years, yet there have not been the

great floods of 1937, 1940 and 1942. We may well be resting blissfully in the lull before another powerful meteorological disturbance which will drop suddenly billions of tons of water and quickly swell our streams over wide flood plains, blocking highways, washing away crops and soil and flooding homes, stores and factories. We are very vulnerable to disasters from both extremes, either droughts or floods, and also to everyday deficiencies brought on by greatly expanded use of water from inadequate sources. The consumption of water has increased many fold during the last quarter century. A look at this picture will be enlightening.

Twenty-five years ago, life in Virginia was predominately rural. There was some industrial activity in or near the towns and cities. However, the water needs were relatively small and easily satisfied at low cost. Think back—how long ago did the big factories come to Virginia to make textiles, chemicals and the wide

variety of products of this industrial age. It was really quite recently. Twenty-five years ago there were many homes without a single bathroom—now many have two or more. The domestic use of water has grown rapidly from a few gallons per person to 100, 200, or 300 in some places. The new industrial development has an enormous need for water—oftentimes the limiting factor in the location of these industries is availability of large supplies of water. Frequently not only is a great quantity required but there are other qualifications such as chemical character—the mineral content—and temperature.

One large chemical plant may use as much water as the whole city of Richmond, or about 35 million gallons per day (m.g.d.). Some large plants will require as much as 50 m.g.d. or even 100! Some industries, which fabricate finished products or which do not use washing or cooling in their process, need only small amounts of water but most industries which convert raw materials into finished products use staggering amounts. For instance, it takes about 65,000 gallons of water to produce a ton of steel, about 150,000 gallons to produce 1000 pounds of rayon, from 60,000 to 85,000 gallons to produce one ton of paper pulp, nearly 80,000 gallons to refine 100 barrels of oil. One obvious use of water in tremendous quantity is hydro-electric power; but it is not so obvious with electricity generated from a fuel such as coal or oil; a large steam plant using 1,000 tons of coal a day requires 600,000 tons of water a day for cooling purposes. A large fuel electric plant will pay seven or eight dollars per ton for coal but wants water

at one cent per ton! Therefore these plants must locate on large rivers or along coastal waters. Water is a *sine qua non* and it must be fantastically inexpensive. This is true for all municipal and industrial use—hence it is taxing the ingenuity of engineers to furnish water at the low cost desired. Cost will inevitably increase as it becomes necessary to go far afield for water, necessitating large reservoirs, long pipe lines and treatment plants. Even then, water can be furnished at amazingly low cost. A common expression to indicate low cost is “cheap as dirt.” This could be better expressed as “cheap as water,” because industry can get water at five cents per 1,000 gallons which is about one cent per ton; municipalities can store, pump and treat water for as low as 25 cents per 1,000 gallons or not much over 5 cents per ton—the price of a coca cola! You cannot get dirt for a nickel a ton.

A water use of growing importance is recreation and wildlife. The two go together. As our human population expands and more leisure time becomes available, the water sports of swimming, boating, angling will become ever more important. Wildlife too, a resource upon which man depends for much of his recreation and enjoyment, needs water. No living thing can do without water, much less the aquatic-loving animals. Our fishing potentialities too can be said to tie in very directly with our future water supply.

Another growing important use of water is irrigation. In the west water is really valuable and frequently fought for. Vast sums have been expended for irrigation, dams, reservoirs and ditches. In quantity this use



Our fishing potential ties in directly with the water supply  
More water means more fishing.



The collection of stream flow data is one of the functions of the Division of Water Resources.



A water use of growing importance is recreation and wildlife. This trout fisherman finds little comfort in a dry stream bed.

is terrifically large and must be *extremely cheap*. As a result of droughts recently, farmers in Virginia are beginning to turn to irrigation. This at once introduces serious problems. Irrigation is utilized when streams are at their low point, heavy withdrawals from either streams or wells cause downstream neighbors to be out of water—even for watering stock. The existing law of riparian rights may prevent farmers from using water from their own creeks or branches. The remedy is large storage reservoirs. This point will be discussed more thoroughly in subsequent paragraphs.

Before we consider “what we can do” it would be well to consider what Nature provides in the form of the “hydrologic cycle” and what we have done already.

The hydrologic cycle is a term used to denote the never ending circle in which water travels. As a starting point, water is evaporated from oceans, putting immense quantities in the atmosphere as clouds. Precipitation occurs over land and sea from these clouds whenever conditions are right. In falling, part of this precipitation is evaporated, and after reaching the ground there is a large amount evaporated from the soil and a large amount is transpired by vegetation. The remainder goes back to the sea as “runoff” through streams and to some extent through underground formations. The cycle then commences again. This is a simplified outline but is sufficient to indicate the overall picture and to indicate that water is a mobile, renewable resource, not like mineral wealth which, once it is mined, is gone.

This cycle recurs regularly but the trouble is, it does not do so uniformly. There are wide variations in the intensity and duration of precipitation which cause conditions such as floods and droughts. From data collected by the U. S. Weather Bureau, “normal” rainfall figures are available for each month and for the year. In Virginia average annual rainfall is highest in two corners of the State, southeast and southwest. Nearly 50 inches a year occurs in a small area southwest of Norfolk and in parts of southwest Virginia. The area of lowest annual rainfall is a strip near the West Virginia line in

the Shenandoah Valley from Staunton to Winchester with about 35 inches per year. The average for the state is about 42 inches per year. But this “average” does not mean too much. Some years (like 1930) the annual rainfall falls as low as 24 inches and in wet years as high as 55 inches. Also it can happen that annual rainfall will be nearly normal, but both floods and droughts will occur, while other years the rain will be fairly uniformly distributed and neither floods nor droughts appear. Suppose we had ten inches in February or March—this would cause high floods—then little or no rain from June to September—this would bring a drought—yet the total for the year would add up to normal.

“Runoff” is the term used to specify the amount of water which runs off from a watershed through stream channels. This runoff includes the direct flow overland to streams and the underground inflow to streams from springs. Runoff is measured by stream-gaging stations. The Division of Water Resources of the State Department of Conservation and Development, in cooperation with the Water Resources Division of the U. S. Geological Survey, has been engaged in an inventory of the surface water resources of Virginia since 1925. A few stations were installed about 1900 by the Survey in cooperation with other agencies or power companies. We now have 192 gaging stations covering Virginia quite comprehensively. These stations are located on all the large rivers, the important tributaries and many on small watersheds ranging from 1 to 25 square miles. Data from these stations (a few with nearly 50 years of record and a number with 25 years) indicate the average annual runoff is about 15 inches.

Some data are available on the factors in the hydrologic cycle known as evaporation and transpiration. During the growing season from April to September, vegetation, trees, crops, grass, transpire from 15 to 30 inches of water.

Rainfall and runoff data show that during the months December through March, there is normally about 13 inches or nearly a third of the annual rainfall, but 10 inches or about two thirds of the annual runoff. This is because evaporation and transpiration are low in winter, vegetation dormant. During the months April to November, the rainfall is 29 inches or nearly two thirds of the annual but during this period there is at least 24 inches of evapo-transpiration leaving only 5 inches for runoff or about one third.

(Continued on page 23)

Gray shadows in the corn!  
That's the elusive

# MOURNING DOVE

By JULIAN C. HARVEY  
*Field Biologist*

**H**OW is the mourning dove population responding to hunting pressure, predators, habitat conditions and other factors? And why is the welfare of this fast-flying upland game bird so important to many Virginia sportsmen?

Any hunter who has swung on the mourning dove has plenty of respect for this dun-gray speedster who can cut all kinds of capers. For years, September and October have brought to some Virginia sportsmen a sport which only in the past five or six years has been catching on with the majority. Perhaps increased hunting pressure and the diminishing of huntable lands is partly responsible for the terrific increase in dove hunting, or possibly these hunters are just beginning to realize the great, sporty shooting that only a good dove stand in a picked cornfield can give.

The most interesting, widely practiced and most difficult method of dove shooting is the organized hunt. It requires the assembly of from five to twenty hunters in a field where the doves are feeding. These shoots are most often organized and conducted by one man, quite often the landowner, who places the hunters at assigned stands around the perimeter of the field. The job of the organizer is also to place these hunters so as to insure that each one is a gunshot—but not much more—from the next stand. This will keep the birds moving and at the same time insure that they will pass within reasonable shooting distance of at least two or more of the shooters, once while entering and once while leaving the field.

The guest at one of these informal but traditional shoots is guaranteed an exciting day and maybe a sore shoulder or jaw. The size of the bag depends on experience at dove shooting as well as the accuracy of the shooting eye, for many an expert quail, grouse and duck hunter has lost confidence with the dove, for the number of shells fired to the number of doves killed often must be seen to be believed. With birds plentiful and flying well it is not unusual to see a hunter surrounded by empty shells and only one or two doves to show for them. The noise of constant gunfire only stimulates the doves to greater agility. By far the greatest percentage of misses occurs from underleading the bird which is

travelling at a far greater speed than the shooter is aware.

Doves are hunted hard today, but in years gone by they were killed by the thousands over baited fields, at water holes and roosts. In spite of the heavy kill and the encroachment of civilization, the mourning dove is holding its own and in some areas showing slight increase, as revealed by the annual dove census conducted by game biologists in all of the southeastern states. To many, the increase of dove populations in the Southeast has come as a surprise in the face of gloomy news and dark pictures by some individuals and several organizations advocating drastic reductions in bag limit and length of season. Some have requested legislation which would place the dove on the songbird list.

Most of the southeastern states became alarmed in the fall of 1950 at the alarming low in population attributed

Dove hunting in shirt sleeve weather is a popular pastime with a growing number of Virginia sportsmen.





The gray duster of the cornfields is an illusive target, and skill and luck are required to bring it down.

to trichomoniasis, a blood parasite which is lethal in stages of the life cycle of the dove and which is spread at feeding areas and to the young in the nest by the infected parents. The population was further affected in 1950-51 by severe weather conditions on the southern wintering ranges. Good production in 1951 and 1952 bolstered the population and they have increased each year since. The 1953 census routes revealed that the number of doves calling on the census areas had increased 17 percent and the number of doves observed had increased 20 percent. These census figures clearly indicate a substantial increase in the entire population for the past three years.

To the question, "What effect has hunting on the mourning dove?" probably the most accurate answer has come out of Florida as the result of an intensive four-year study of dove population dynamics headed by Frank A. Winston of the Florida Game and Fresh Water Fish Commission. This study closely followed studies carried out by other southeastern states, but the geographical position of being relatively "self-contained" by a narrow northern boundary and extensive water barriers on all other sides, plus the extensive backlog of some 8,000 band recoveries has allowed that state to present an analysis of a great amount of information on the wintering dove populations. During the course of the study a volume banding technique was developed which enabled the workers to band an additional 9,000 birds. In other words, Florida had more available information on the mourning dove than any other state.

The result of this revealing and startling study is that under present bag limit and hunting season regulations

we are removing a very small segment, approximately four percent of the dove population which is accountable to the gun. Total band recoveries as a result of volume banding have averaged less than three percent of the total number of banded birds. If all band recoveries were assumed to be from hunting (which they are not, 18 to 36 percent of recoveries coming from birds dead of natural causes) and the recovery rate were increased by 25 percent to allow for crippling loss, the total volume of band recoveries would not exceed four percent of the total population. If it is desirable or necessary to double or triple this four percent figure it still would remain a small percentage to account to the gun. After analysis of the total band recoveries, Mr. Winston found that 80 percent of the band recoveries were made within one year of banding. Since records from banding are considered to be representative of the total dove population, it can be said that only 20-30 percent of the doves survive beyond one year. Analysis of band recoveries further revealed that an overwhelmingly large segment of the band recoveries from doves occurred during the first 90 days after banding. Dove studies for a long time have clearly indicated that the mortality of young is much higher than that of adults. Hunting seasons set early, as close as possible to the peak of the population will necessarily cause hunters to remove a portion of those doves that would normally be lost to other natural causes. During the peak of the population, the Florida study found that within the first 90 days, 50 percent of the birds would die regardless of whether they were left unharvested to die or were taken by the gun. The kill figure of four percent of the total population is certainly an insignificant figure when it is taken from the peak of the population.

The peak of the dove population normally occurs during the fall months of September, October, and November, which also is the period of the southeastern and southwestern hunting seasons. From this it becomes evident that our hunting seasons are being set at the proper time to remove a segment of the population and still do little damage to the overall population. The conclusion reached by Mr. Winston that our present regulations are in no way affecting the overall dove population certainly seems warranted.

Virginia dove hunters enjoyed a rather successful season with good dove concentrations during each of the split shooting periods. Although the annual dove census has not yet been run and figures are not yet available for this coming season, the resident population over a large proportion of the main Virginia flyway has been high indicating that if nesting weather remains good, production should be high again for 1951.

If by chance you have not given the dove a whirl with your favorite double in a good picked cornfield, then learn for yourself this fall that the little gray speedster is worthy of its high position on the game bird list. And if by chance you are a man who has caught the fever, then here's hoping that we meet with an armful of shells for a chance at a couple of doves.



Author Watson with two fine specimens of wild ginseng.

## GREEN GOLD in Them Thar Hills

By SEDGWICK WATSON

(Commission photos by Kesteloo)

"I'VE got a two-prong." "Here's another one and some little mites I'm gonna leave." "Wow! Look at this beauty, a four-prong. Bet the root weighs a quarter-pound."

No need to be disturbed, gentle reader, a couple of maniacs are not loose in Grandma's pet dahlias. Rather

a pair of old time "seng" hunters are bubbling over with righteous enthusiasm as they locate a patch of money-making "giuseng."

*Panax quinquefolium*, or 'seng as the plant is called by those familiar with it, is a mystery herb. Its proven medical value is probably the least of any known herb,

yet the Chinese so prize it that its value is twice to three times that of the next most valuable herb, goldenseal. The Chinese have great faith in 'seng. They believe it has curative powers, that it adds longevity to life, and that it is an aphrodisiac. If we laugh at the Chinese for this, I know they laugh at us for swallowing billions of nondescript pills each year to cure our ills. At best we can call the matter a draw: each man to his taste.

There's money and hard work in 'senging. But there are things money can't buy: excitement, wonderful recreation and exercise, communion with nature such as can never be found while carrying a gun or fishpole.

Ginseng is a shy and inconspicuous plant generally decimated near the haunts of man and now nearly always found far up in the mountains, in rich timber, coves and inaccessible places. An old 'seng and herb hunter is usually the ultimate in woodsmanship and conservation. To be successful at his trade he must possess an intimate knowledge of all that grows. As a botanist, he surpasses other outdoorsmen far and wide. But as man advances further back into the mountains, the 'seng becomes less and less. Like the buffalo hunter of yesteryear, the old time 'seng hunter is rapidly following the path to oblivion.

'Senging today is pretty much done by part time people, by people who know the woods and like to 'seng several weeks in the fall for the unsurpassed recreation and a few dollars of pin money.

There's 'seng in the entire Appalachian Mountain region from New York to Georgia, and in the rich and rolling mountain sections west to the Mississippi and occasionally beyond. In Virginia it is found in the western mountains. A small 'seng seedling has three leaves and is hard to identify except by people who know it thoroughly. Above the seedling stage, 'seng comes up from one main stalk and branches out about a foot from the ground. Each branch is called a prong—

An umbel of small white flowers blooms from the center of the ginseng plant in the spring and matures into a cluster of bright red berries.



thus a plant with two branches is called a two-prong and so on. Generally the greater the age, the more prongs and sturdier the plant. One with four prongs is a dandy and will have a good root. Occasionally one is found with more than four prongs, but such a plant is an exception. On each prong of 'seng above the seedling stage there are five olive-green leaves, their shape resembling a birch leaf, the margins of which are moderately serrated. There are three large leaves at the end of the prong and two small ones behind. An umbel of small white flowers blooms from the center of the plant in the spring and matures into a cluster of bright red berries in the late summer. The plant turns a beautiful yellow when the first frost kisses the ridge-tops and these leaves and the striking red berries make a patch of 'seng an arresting sight. Many an old 'seng hunter will recall with shining eyes and quaking voice his feeling when coming upon a large "strike" of autumn 'seng.

'Seng hunting is a science. Make no mistake about it. Only he with a love for the distant hills, a better than average knowledge of the woods and perseverance — *oh, that important perseverance* — can be successful. Every 'seng hunter, old timer or beginner, hopes for that fabulous strike — a legendary dream handed down over the years where thousands of dollars worth of root is found in one location. Such finds have been made in the distant past but by present day standards a pound of root dug in one place is a crackin' good find. Once in a while you may find an isolated rich bench just under a mountain top that nobody has "worked" for years. Here you may find five to ten pounds of the green gold in one spot and you'd feel lucky.

I must confess that my largest "strike" was just that — pure unadulterated luck. One beautiful fall day I was trolling for northern pike on a large lake in northern New York state. The surrounding mountains were perfect 'seng country: rich deep forests with plenty of sugar maple. I never gave the valuable herb a thought, though

Noah George, an old-time herb hunter of Bath County, looks over his cultivated stand of goldenseal. The wild variety can still be found in the mountains.





The proper curing of ginseng roots is an important phase of herb marketing. Roots should be cured bone dry.

such areas are popular with vacationists and guides and any 'seng is usually stripped clean. A severe wind storm came up and as I was rowing my boat was blown clear across the lake to an isolated shore. Securing the boat I climbed out to stretch. What a sight! A beautiful four-prong, radiant with dying colors greeted my first glance: a backdrop of brilliant autumn red, tan, yellow, gold. Another quick look and there was a three-pronger. Then a pair of two-prongs leaped at me. Great Day in the Morning! Was this the jack-pot? I found myself walking, trotting, then crashing pell-mell through the undergrowth trying to look a dozen places at once. It was a good strike for the section and all in a moderate sized grove of sugar maples. Frantically I dug some 21 pounds of green root. As this occurred during the last depression, I felt like a poor mucker whose gusher had come in.

An intimate knowledge of 'seng habitat is necessary to be a successful hunter. 'Seng does not grow on poor or dry soils. It always occurs in practically pure hardwood forests. It does not prefer pure oak forests, but if found with oaks, it's generally red oak. In Virginia the largest amounts are found on the northern exposure of mountains, in rich coves and deep ravines. The soil must be rich, deep and well drained. Timber types on the ground are the best indicator. When you find a location in Virginia where the sugar maple and bass-woods grow, along with a few black walnuts and butternuts, then you have it. Some excellent ground indicator plants are sarsaparilla, stinging nettle, Indian turnip, and black cohosh.

'Seng should always be dug in September or later. The root will then have its year's growth and the moisture content will be less than a summer dug root. The seed will be mature and if it hasn't fallen, you can wisely plant the seeds and help reproduce the stand. This is sensible conservation and assures a future crop. It is best to leave the small plants. Remember that if you dig them all up today, tomorrow's fun and profit will never come. 'Seng grows very slowly and has many enemies beside man: disease, insects, mice and moles eating the

roots, deer browsing the tops. Only because most 'seng diggers are conservationists has the plant survived.

'Seng seems to realize it's a marked plant. The easy pickings are gone. It takes a great delight in growing where the rattlesnakes are thickest and where the poison oak and stinging nettle grow the thriftiest. And it loves to grow where rolling rocks play havoc with the diggers' shins.

Once you have your roots, don't botch up the job. Wash the roots but do not scrub them. Dry on an open rack with circulation from all sides, but do not use artificial heat. Do not allow to mold or they become worthless. Cure until bone dry. You can tell when herb roots are bone dry as they will snap when pressure is applied and will not bend. Don't allow ends to break off the roots, and ship in a box, not a bag, for top prices. It takes around three pounds of green root to make a pound of dry root. I don't believe 'seng has ever sold under ten dollars a pound dry and has been up in the thirties. It has averaged fifteen a pound in Virginia for the past several years.

There are roots that on the whole will bring a digger greater profit because of their numbers and easy digging, but there are none that offer the challenge: the challenge of the big woods, of know how; challenge of the mysteries of nature. There never was a great old 'seng hunter who didn't realize the immenseness of nature and the smallness of him.

### Goldenseal

Goldenseal is next in value to 'seng. The plant is also exacting in growing requirements, usually growing along with 'seng. Yellow puccoon is sometimes a local name for goldenseal or 'seal. This plant is usually found in larger patches than 'seng, probably because fewer people are familiar with it. It's an upright herb, a foot or better in height with two or three large deep green leaves. Its white flower comes directly out of the leaf, which is unusual. A cluster of red berries matures in the late summer. Digging should follow this period. Preparation and curing of 'seal roots should be exactly as 'seng. The tops of 'seal are also valuable. Dry the leaves on racks in direct sunlight but do not expose to rain or dew. Turn the leaves often for even drying and one-color curing. This prevents molding. Cured 'seal roots in the past several years have been bringing three to six dollars per pound, and the dried tops have averaged one dollar per pound.

### Other Plants

There are several other plants always welcomed on the herb market: seneca snake root, wild ginger, Virginia snake root, golden thread, lady-slipper, and May apple or mandrake. The roots are usually the valuable parts. Practically all the root herbs dry out to the ratio of one dry for three green. Most of these roots usually bring between fifty cents and a dollar per pound. Mandrake is often a big money maker and is sometimes

(Continued on page 23)

## VIRGINIA WILDLIFE

# CONSERVATIONGRAM

### Commission Activities and Late Wildlife News . . . At A Glance

HUNTING LICENSES TOP HALF MILLION MARK. Executive Director I. T. Quinn of the Commission of Game and Inland Fisheries reports that for the first time the sale of hunting licenses has crossed the half million mark. 502,030 hunting licenses and 425,381 fishing licenses were sold during the fiscal year ending June 30, 1954, a total increase of 61,081 licenses more than were sold during the previous year.

NATURAL RESOURCES CONSERVATION WEEK, OCTOBER 17-23. Governor Stanley has proclaimed the entire week of October 17-23, 1954 as Natural Resources Week in Virginia. Schools, clubs, civic groups, newspapers, radio stations and governing bodies are urged to give special attention to this week by emphasizing the importance of natural resources to Virginia's well being. Information and education and inspirational programs, tours, exhibits, etc. are urged as media for local participation in this special week.

WATERFOWL HUNTING DATES ANNOUNCED. The Department of the Interior has issued the migratory game bird hunting dates for the 1954-55 season. In Virginia the season for ducks, geese and coot will be November 12-January 10; for brant, December 13-January 10; for clapper rail and gallinules, September 11-November 19. The second half of the split season on doves comes in October 16 and goes out November 4. The season for woodcock will be November 20-December 29 and for jacksnipe (Wilson's snipe), November 20-December 4.

COMMISSION PERSONNEL TO ATTEND SOUTHEASTERN CONVENTION. Executive Director I. T. Quinn, Chief of the Game Division C. F. Phelps, Chief of the Law Enforcement Division Webb Midyette, Commissioners T. D. Watkins and W. C. Gloth, Jr., and members of the technical staff will attend the convention of the Southeastern Association of Game and Fish Commissioners in New Orleans November 1, 2, and 3. Midyette, chairman of the Association's law enforcement will preside over that section.

OVER FOURTEEN MILLION TO STATES TO AID WILDLIFE. The Department of the Interior has announced that \$9,796,800, available to state game departments under terms of the Pittman-Robertson Act, has been apportioned among the 48 states for the restoration and development of their wildlife resources during the fiscal year 1955. \$185,955 will be Virginia's share, based on the state's proportional area and the ratio of paid hunting license holders among the states. Federal funds, available under the Dingell-Johnson Act will provide four and a half million to the states for sport fishery restoration projects, of which \$71,186 will come to Virginia. The D-J revenue is derived from the 10% excise tax on sport fishing equipment paid by the manufacturers.

GOOD NEWS FOR VIRGINIA DEER HUNTERS. Game biologist Stuart Davey has good news for prospective deer hunters in the Old Dominion. With luck and favorable weather, Davey sees no reason why Virginia sportsmen should not bag 17,600 deer during the current season and believes they may well be harvesting 30,000 deer annually by 1956.

CONSERVATION FORUM AT GOSHEN PASS. I. T. Quinn, executive director of the Virginia Game Commission, will take part in the Conservation Forum of resource-use education agencies in connection with the three-day Highway Conference October 6, 7 and 8. The forum is to be held at Goshen Pass Wayside while the regular Highway Conference will be at V.M.I.

VIRGINIA FUR CATCH REFLECTS CHANGING FASHION. Statistics on the annual fur catch in Virginia between 1948 and 1953 show a conspicuous decline, especially during the last year for which figures are available and particularly in the long-haired furs, such as fox and raccoon, no longer in the fashion favor they once were. The total catch in 1948-49 was 309,099, whereas in 1952-53 it was only 194,713.



Soil Conservation Service photo

Scarlet oak, *Quercus coccinea*, is an important mast food for many forms of wildlife.



The black walnut is a favorite with the squirrel clan.



Black cherry is a valuable fall food for many birds and mammals.



Opossums and foxes don't mind the wry taste of the prolific persimmon.



## NATURE'S BOUNTIFUL CUPBOARD

October brings its share

Food is a universal requirement of all animal life—a factor which nature forgets not as she closes out her fruitful year with a storehouse of fruits, nuts, and vegetative parts.

Here is only a small sample of her wildlife offerings.



Soil Conservation Service photo

Holly berries make wonderful tidbits for songbirds.



Beechnuts are still favorites with wildlife and man.



Soil Conservation Service photo

An autumn favorite of wildlife is the fox grape.



All important dove food is the fruit of the pokeweed.



of wildlife foods

All wildlife looks to the autumnal harvest for its fall and winter supply of life-sustaining foods.



the hickory has replaced the chestnut as the most valuable squirrel food.



Though not too common, chinquapins continue to be much sought morsels of wildlife.



Many forms of birdlife utilize red cedar berries.

# Coonhounds— Pets or Hunters?

By JOHN H. McLAUGHLIN<sup>1</sup>  
Assistant County Agent,  
Pittsylvania County

*There will always be eager hounds to follow the trail,  
but the big question is: will there always  
be 'coon trails to follow?*

AS LONG as there are coonhounds with the courage to put a coon to flight there will be men to follow them. Should the unhappy day arrive when the raccoon population declines or disappears altogether, we may find that the coonhound will have to change from a hunter to a pet. This would be unfortunate indeed, unfortunate for the countless devotees of coon hunting and the even greater number of their long-eared companions who love the smell of an exciting coon trail.

Recently the writer and Bill Kellner, special services officer for the Game Commission, made a survey of 31 western Virginia counties in connection with a raccoon study by the Virginia Cooperative Wildlife Research Unit. One of the purposes of the survey was to determine the number of coon hunters and coonhounds in the region. Though we did not locate all of the men and hounds that make the raccoon the principal object of their sport, a total of 518 coon hunters was recorded, and these men owned 1438 hounds. This group took a total of 3,955 coons during the 1951-52 season, and both the hunter and hound had fun doing it. The 500-odd hunters are certainly more interested in breeding their hounds as hunters rather than pets, and want to know how they can help keep their hounds as hunting companions—not as show animals.

The coon situation in Virginia is varied. In eastern Virginia the animal is abundant, so abundant in fact, that it is a nuisance in many areas. In western Virginia, the raccoon is widely distributed but is found nowhere in the numbers equal to the highly populated areas of



The key to future 'coon hunting in Virginia lies squarely upon the shoulders of the 'coon hunter.

eastern Virginia. Also, strangely enough, there is more interest in coon hunting in the mountains than in the coastal plains.

In recent years, coons have increased tremendously throughout their entire North American range. Wildlife men who have devoted years to this study are unable to explain this fact completely.

Nature's fluctuations in abundance are mighty curious and their causes are still, for the most part, a mystery to man. The old adage that "everything that goes up must come down" is certainly true in wild animal populations. Those of us whose hackles rise when we hear an open trailer must face the grim fact that coons may not always be as abundant as they are now. We fear that if coon populations become as low as they were ten or fifteen years ago, the present number of hunters in western counties can place many of the coonhounds on retirement. Then, we'll have to start breeding our coonhounds for type and conformation and parade them before the bench show judges.

All of us are prone to compare our state's western coon range with that of eastern Virginia and wonder why we have fewer coons in the west. Our western ranges, for the most part, are limited to small mountainous areas usually centered around the drainage area of a mountain stream. Many of these areas lend themselves to complete hunter coverage during a single season. The eastern section contains countless swamps which are ideal coon habitats. A great many of these marsh areas are never hunted, while those that are hunted seldom receive total coverage by hunters during one season. The eastern coon habitats are capable of supporting a far greater number of coons per square mile than are the western ranges. This is primarily due

<sup>1</sup>Based in part on data taken from a master's thesis submitted to VPI. Release No. 54-4 of the Virginia Cooperative Wildlife Research Unit, Virginia Polytechnic Institute, Virginia Commission of Game and Inland Fisheries, Wildlife Management Institute, and Fish and Wildlife Service, cooperating.

to a greater abundance of preferred raccoon food and a tremendously larger number of den trees. The fact that stares us in the face is that we must handle our western coon hunting areas more carefully. There are times when a seasonal bag limit of twenty coons is too great a drain on a particular hunting area, and it is up to us to be on the look-out for this situation and avoid too great a harvest.

Most of us are aware of the great handicap that the cutting of den trees imposes on future coon hunting. Although coons do use rock dens occasionally, we usually find them utilizing ground den sites as a last resort, for the coon is normally in greater abundance when den trees are plentiful. If every coon hunter in the state cut one den tree a season, these potential coon "brooders" would soon be things of the past.

A large number of coons are shipped to the western counties of Virginia every year for release and the ultimate fate of these animals is virtually unknown. Now hundreds of coons have been planted in western Virginia and all of us are completely ignorant as to how far they traveled from their release point before they were taken by hunters, or how long they survived in their new mountainous homes. Without the help of coon hunters, these questions will never be answered. The only possible way to know if our restocking is paying dividends is to tag each coon before it is released AND to return tags (to the address shown on the tag) together with the date and place of capture of the marked animal.

Raccoon management is primarily a matter of protection of the habitat along with sensible law-abiding hunt-

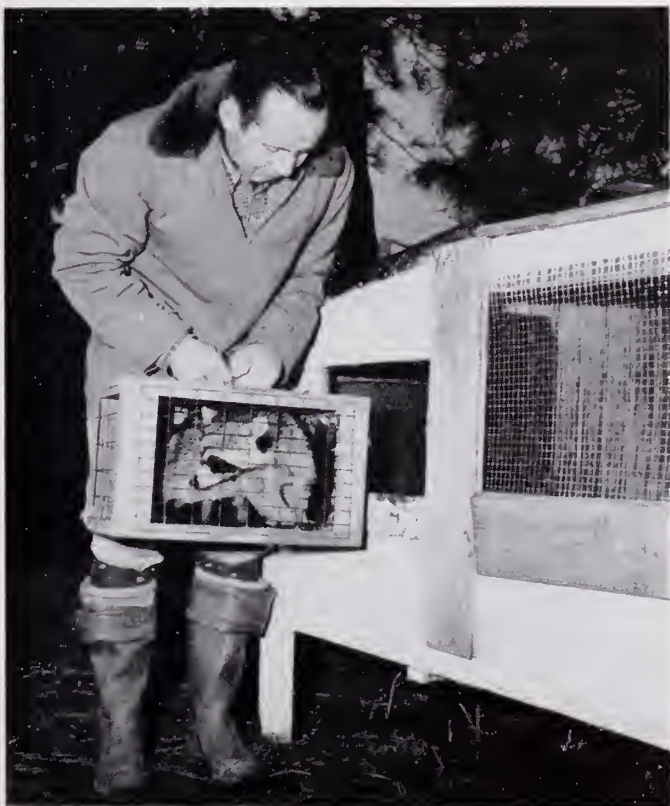
ing practices. Accepting this as true, who then holds the future of coon hunting in his hands — the coon hunter or the State Game Commission? The Game Commission can encourage habitat improvement, but that is a long-range program. Likewise it can assist in other ways, but the hard facts convince us that honest, level-headed coon hunting clubs can do more to insure good hunting in the future than a game commission can. Our Game Commission is working against tremendous odds trying to help the coon hunters, but the fact remains that our spunky ring-tailed clown does not lend himself too readily to management.

The men composing the coon hunting clubs that we came in contact with were almost invariably the highest type men you will find anywhere. They were men who had good coonhounds to talk about — men who had nothing to hide, who loved to coon hunt and wanted to insure the continuance of the sport. Almost without exception, the hunters who hunt out of season, who test dogs bought on trial regardless of time of year, who exceed their bag limits, and who cut den trees are *not* members of coon hunting clubs. It is up to us to get these people into our clubs where we can try to influence their thinking and help them to learn that they are cutting their own throats (not to mention that they are cutting ours, too) when they practice such coon mismanagement.

If all who follow coon hounds could hunt with men like John Kelly Lloyd of Clarke County, we would not have to worry about their being true coon hunters.

John Kelly Lloyd has always loved coon hunting but a few years ago fate dealt him a rotten hand when an explosive charge blew up in his face leaving him blind. As we expect a coonhound with good blood to shake off a blow and continue on in the chase so did John Kelly take his blow in stride, never once asking for sympathy or favors. Not for a split second did he harbor any idea of giving up his sport. Now it is necessary for him to follow a hunting companion in the woods, keeping a light touch on his shoulder. I am told by his friends that his touch is so light and his ability to follow another hunter is so keen that after a few minutes in the woods, once is scarcely aware of his presence. While talking with John Kelly, I could not help but wish that more of our coon hunters shared his viewpoints on the sport. He could not understand how a dyed-in-the-wool coon hunter could buy a hound on trial and make him prove his mettle out-of-season when some coons are actually nursing their young.

It all boils down to the hard, cold fact that in these days we not only have to train our coonhounds, but we must also train some of the coon hunters in our counties if we expect to follow this sport of coon hunting very long. There will always be great coonhounds eager to follow a trail, but will there always be trails for them to follow? Our coonhounds can continue to hold their hard-earned title of "hunter" if we improve the habitat for coons and exercise sportsmanlike judgment in our hunting of this little beast with a giant's spirit.



The Commission's 'coon trapping and restocking program has aided greatly in returning the raccoon to the western mountain counties.

# Early Naturalists in Virginia

By DOROTHY TROUBETZKOY

**E**VEN before the settlement of Jamestown in 1607, a study of plant and animal life in Virginia had been published by Thomas Hariot of the Roanoke Colony. He had ventured North as far as what is now Norfolk County and his "Brief and True Report of the New Found Land of Virginia" appeared in 1590. Though "Virginia" then included the North Carolina settlement, his observations applied also to the southeastern part of present-day Virginia which he had visited, so he may be considered the first naturalist to write a scientific paper about the Old Dominion.

From colonial Virginia were sent many seeds, cuttings, live and pressed plants which stimulated curiosity and study in Europe. Carolus Linnaeus (1707-1778), "father of modern botany," relied on such living and dried specimens, amplified by reports from such American naturalists as Bartram and Clayton, to describe and name many New World species.

Most thorough of the 17th century botanists in Virginia was John Clayton (1693-1773) who came to the Colony with his father, the Reverend John Clayton, also a naturalist, in 1705. He studied in the office of Peter Beverly, prothonotary of Gloucester County whom he succeeded in the office which he continued to hold for half a century. Clayton lived in what is now Mathews County and collected plants extensively in the eastern part of Virginia, but made some expeditions westward, probably into the piedmont section, and was planning a trip into the Blue Ridge Mountains at the time of his death. His *Flora Virginica*, edited and printed by Gronovius, was originally published in Leyden in 1739.

In his memorial of Clayton, written in 1805, Benjamin Smith Barton says that, despite his reputed parsimony in other matters, Clayton gave rewards for the discovery of any plant unknown to him. Barton also reports: "I have heard him say, whilst examining a flower, that he could not look into one, without seeing the display of infinite power and contrivance; and that he thought it impossible for a BOTANIST to be an ATHEIST."

John Banister, an episcopal clergyman who migrated to Virginia in 1668, devoted much effort to studying plant and animal life and his plant list, *Catalogus Plantarum in Virginia Observatorum* was incorporated in Ray's *Historia Plantarum* and issued in 1686, probably the first published botanical drawings made in Virginia. Banister was killed during a botanical expedition to the Falls of Roanoke in 1692 before he had completed

the natural history of Virginia on which he had been working for many years.

John Mitchell, who settled on the Rappahannock at Urbanna about 1700, was better known as a cartographer than as a botanist, but he traveled and collected widely in the colony and is honored by the scientific name of the partridgeberry, *Mitchella repens*.

Dr. James Greenway of Dinwiddie and Dr. Richard Field of Brunswick are remembered for local studies, but Virginia botanists in general were inactive after the Revolution. However, out-of-state botanists, like B. S. Barton in 1802, 1804 and 1810, Frederick Pursch in 1806 and Asa Gray, about 1840, visited Virginia, making collections. Barton planned a revision and enlargement of Clayton's flora and parts appeared in 1812, but it was never completed.

John Bartram (1699-1777), American botanist to King George III, founder in 1731 of the first botanical garden in America at Kingsessing, Pennsylvania, called by Linnaeus "the greatest natural botanist in the world," had visited the western parts of Virginia and was the first to discover a number of our native plants. Among American specimens he was the first to introduce into Europe were the skunk cabbage, sugar maple, hemlock, dogtooth violet and sweet fern.

Although the bulk of systematic and scientific studies made in Virginia during the 17th, 18th and early 19th centuries were devoted primarily to plants and birds, most of the general works about the Old Dominion contained copious observations on the fish, birds, mammals, reptiles and insects of the area. Captain John Smith, Ralph Hamor, Robert Beverley, William Strachey, the elder Clayton and Colonel William Byrd all left valuable, if incidental, records of the wildlife of early Virginia. For example, John Clayton, in a letter written in 1739, spoke of porcupines recently killed, though the species was already scarce and is long since extinct in Virginia. Strachey, describing a more common animal, commented: "The Rackoone I take to be a Species of Monkey." The elder Clayton wrote to English chemist

Audubon beaver print from the "Quadrupeds of North America."



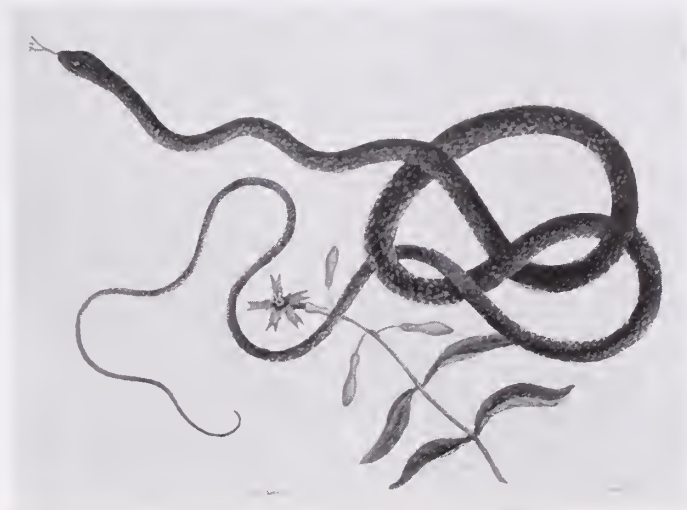
Robert Boyle about the "lightning bug" and in a letter to the Royal Society in 1688 suggested the use of sulphur to control the tobacco worm. Many writers described the Virginia deer and bear, commented on the wolves, the flocks of wild turkeys, the great "flocks of pigeons" and waterfowl, and expressed wonder at the abundance and variety of salt and fresh water fishes, among which they named the sturgeon, bass, carp, pike, bream, flounder, perch and drum.

The first bird list for Virginia and North Carolina was made by Hariot. The first birds described by a Jamestown settler were the "black birds with crimson wings" seen by George Percy. Another official, Strachey, compiled a bird list with notes in 1610-12. His description of a now extinct bird shows how persistent at the time was the hope of a passage to the "South Sea" and the spice islands:

Parakitoes . . . a fowle most swift on wing, their winges and breasts are of a greenish cullour, with forked tayles, their heades, some crymsen, some yellowe, some orange-tawny, very beautifull hath given us somewhat more hope of the nerenes of the South Sea.

It was the English naturalist, Mark Catesby (1682-1749) who wrote the only first-hand scientific account of birds in Virginia available during the 17th or 18th centuries. Since the memorial tablet was erected in Bruton Parish Church, Williamsburg, in 1929, further researches have corrected the date and place of his birth to March 24, 1682, in his mother's village of Castle Hedingham, in Essex, about eight miles from Sudbury, where he grew up and where his father was several times mayor.

Probably first published portrait of Virginia's state bird, the cardinal, engraved from the painting by Mark Catesby.



Mark Catesby snake print published in 1931, engraved from original painting and tinted by hand.

Catesby came to Virginia when he was 30 years old, to visit his sister, Elizabeth, who had married Dr. William Cocke, member of the Council and Secretary of State. He spent much of his time, however, in Caroline County, at the home of Major Woodford who was married to the naturalist's niece.

When Catesby returned to England, probably in 1719, his collections of plants and birds aroused such interest among members of the Royal Society and other scientists that they persuaded him to return to America. Although on this second trip his travels were to the south of Virginia and culminated in his great work, *The Natural History of Carolina, Florida and the Bahama Islands* (1731-43) his Virginia sojourn had supplied the basis for the studies and stimulated the support which made the volumes possible. When he returned to England, he etched the folio-sized plates of his paintings and the plates were hand-tinted under his direction. "As I was not bred a painter," he wrote, "I hope some faults in Perspective and other niceties, may be more readily excused."

Since he was probably the first to paint the cardinal which has been our official state bird since 1950, his description of the "red Bird" which he posed on a "Hicory Tree" has a particular appeal for us:

In bigness it equals, if not exceeds the Sky-Lark.  
The bill is of pale red, very thick and strong: . . .  
The Head is adorned with a towering Crest. . . .  
Except the black round the basis of the bill, the whole Bird is scarlet. . . . They are frequently brought from *Virginia* and other parts of *North America*, for their Beauty and agreeable Singing . . . which in *England* seems to have caused its Name of the *Virginia Nightingale*, though in those countries they call it the *Red-Bird*.

Jean Jacques Fougère Audubon (1785-1851), natural son of a French captain and a creole of Santo Domingo, was spurred to his career of painting birds and other animals by a love of forest creatures, a distaste for conventional "cabinet art" and particularly, it is said, by a

(Continued on page 23)



Wildlife's basic need is food and cover. These barren acres if left alone could once again produce wildlife.

## A **NEGATIVE** Approach to Game Abundance

By C. H. SHAFFER

*State Leader, Farm Game*

*We have long harped upon the "do's" of wildlife management.*

*How about the "don'ts" as an approach to more game?*

**D**O YOU WANT more game in the woods and fields of Virginia? It's up to you! All that is necessary is that you help yourself and cooperate with the Game Commission by NOT DOING certain things. It will not cost you any special effort, no additional time, nor any money. All that you need is a constant awareness of the birds and animals, a slight knowledge of their daily habitat requirements, and an unselfish desire to conserve wildlife populations. Sounds easy, doesn't it? It is!

When we look over all the known methods of increasing wildlife, we find that they fall conveniently into two main groups. On one side of the fence we have constructive activities, and on the other side fall those techniques aimed at halting destructive practices on what we already have. We could designate the two approaches as the positive and the negative; the offensive versus the defensive; or simply, as the "do's and do not's" of wildlife abundance.

The majority of Virginia's hunters are familiar with many of the positive or constructive activities of game management. Such techniques as restocking game, controlling natural predators, establishing sanctuaries, planting food and cover, creating wildlife clearings, are practiced on a large number of farms and game preserves in the state. Some of the practices have been successful, others not. However, it is not our purpose here to discuss the relative merits of these positive actions toward increasing wildlife. We will merely point out that each of the constructive steps requires effort, time and money, either for the individual or for the state.

On the other hand, the elimination of destructive forces or the negative approach, which we will elaborate upon, requires nothing but self-restraint on the part of the hunters and farmers of the state. Merely by NOT engaging in certain harmful practices which destroy wildlife populations and their habitat a constant supply of birds and animals can be assured for future generations.

The most obvious of the negative techniques or the "don'ts" concerns the game laws. Actually, most of the regulations regarding the harvest of wildlife are made for the sportsmen's own benefit. Based on information concerned with the present status of the various game birds and game animals, laws are enacted governing their harvest. The objectives of the regulations are, like most conservation activities, aimed at taking the surplus of the game through hunting, but to still retain enough of the population to assure a continual supply of the species for posterity. Thus, by NOT breaking the game laws—by NOT killing more than the law allows and by hunting only during the allowed seasons—the sportsmen can be assured that they are doing their part in assuring their favorite sport in the future. IT DOES NOT TAKE ANY TIME, ANY MONEY, OR ANY EFFORT TO OBEY THE GAME LAWS; ALL THAT IS NEEDED IS AN UNSELFISH AND CONSCIENTIOUS WILL TO CONSERVE THE WILDLIFE POPULATIONS.

Another *don't* of wildlife management that comes readily to mind and can be practiced easily by all sportsmen, if they sincerely want to do their part toward wildlife conservation, is that of not allowing pets—dogs

and cats to run at large. Sportsmen generally are prone to blame every natural furbearer, bird of prey, or reptile for the shortage of wildlife but few will admit that their own pets do any damage to birds and animals. When a dog is bred and trained for generations to hunt, what else can be expected of him other than destructive hunting?

If the sportsmen are interested in obtaining some information as to the depredation of dogs, all they have to do is to check at their county office and discover the tremendous amount of money that is remunerated to farmers each year because of dog destruction to livestock and poultry. If the multitudes of free-running dogs destroy all this domestic stock, what must be happening daily throughout the state to wild birds and animals?

It is rather obvious that when any percentage of animals and birds are destroyed, it reduces the numbers available for the hunters during the regular season. If in the spring of the year, one quail or turkey nest is destroyed by predation, that means one less covey or gang that will be available for the sportsmen in the fall. It has been fairly well established that the presence of self-hunting dogs has resulted in failures of deer and turkey stocking efforts in many areas. Thus, the simple expedient of keeping pets confined would be a tremendous boon to wildlife populations. It would not take

much time, effort, or money, just a sincere desire on the part of every sportsman in the state. It can be accomplished by not letting those pets run at large, especially during the breeding seasons of the game birds and animals.

To provide habitat for game, it is not always necessary to plant special food and cover. Adequate results can often be obtained by not farming too close. This will be our next negative approach to wildlife abundance. On numerous occasions our game biologists have discovered that adequate wildlife food and cover has been destroyed and substitutes planted in their stead. Too often we have witnessed honeysuckle bulldozed and sprayed and Korean lespedeza plowed up in order that materials supplied through the Game Commission might be planted. These efforts, though well intended, required time, effort and expense.

In reality, wildlife materials are furnished to landowners for the development of areas on the farms that are barren or void of food and cover. The game biologists will be the first to admit that it is difficult to improve upon certain natural habitat that already exists on many of the farms of Virginia. The cleaning of fence-rows and other natural wildlife feeding and nesting areas may result in a more beautiful farm, but the birds and animals will soon vanish. A beautifully furnished, spotless parlor is not necessarily the most livable. Thus, one of the simplest methods that we can suggest to increase game populations is not to farm or graze too closely. The simple expedient of not harvesting grain and lespedeza right up to the fences and the woods borders will pay big dividends in wildlife populations. Again we repeat, it will not require any effort, time or money, just a sincere desire to help increase wildlife.

The night hunters of the state long ago discovered another negative approach to help their favorite raccoons, opossums and foxes. The practice has assisted remarkably in increasing the numbers of these animals locally. The technique is not to cut, burn or otherwise destroy den trees or ground dens. There are many hunters who feel that the thrill of the hunt is experienced through the chase and not necessarily in the capture of the animals. They feel, and rightly so, that the homes of 'coons, 'possums and foxes should be respected, and if once destroyed, the occupants would naturally be forced to move elsewhere. All that this simple method requires is self-restraint on the part of the hunters in not destroying the natural homes of the animals.

This same quality of self-restraint might well be practiced by the squirrel hunters in a similar negative approach to increasing the numbers of bushytails in our woods. Continuing our line of reasoning, is it not simpler and more advantageous to the hunter (as well as to the squirrel) to preserve den trees and leaf nests in order to increase the squirrel populations? When the natural homes are destroyed, there is always the risk of destroying future squirrel hunting in our forests. The presence of a large number of leaf-nests in the woodland is usually an indication of a shortage of natural tree



Wildlife enemy No. 1 is the poacher or the illegal gunner. This man is not only breaking the law, but is destroying the very sport he seeks.



Uncontrolled loose-running dogs are a serious menace to wildlife. Better dog control is urgent.



Forest fires mean death to game and its food supply. When forests burn, everybody loses.

dens, but apparently it is not too uncommon a practice for hunters to shoot into these unprotected nests in the hope of killing a squirrel or two. Numerous den trees are destroyed yearly by uninformed timber operators who cut hollow trees even though the trees are usually of no commercial value for lumber. Here again, self control and a consideration for domestic needs of the squirrel would undoubtedly do much to perpetuate their numbers. And it wouldn't cost anybody any money, time, or effort either!

One of the most publicized negative techniques is that of NOT burning indiscriminately. The state and national forest services have done an excellent selling job in educating the general public to the terrible consequences of uncontrolled burning of any type. Today even the youngest school child realizes that fire in the woods and fields will destroy not only the birds and animals themselves but their food and homes as well. The sportsmen, probably as much as any one group of individuals in the state, should practice the policy of being super-cautious when dealing with fire in any of its many forms.

Anyone who has ever hunted rabbits knows that brush piles in a gulley are one of the favorite haunts of the cottontail. Those sportsmen interested in perpetuating the sport of rabbit hunting could help themselves by encouraging their friends on the farms to preserve these rabbit habitats simply by NOT burning them.

There are doubtless many other negative methods by which wildlife can directly or indirectly be increased. We have attempted to emphasize that game can be increased, either by constructive practices or by preventing destructive activities. The important requirement, regardless of the effort expended, is that in all outdoor activities we give some thought and consideration to the basic requirements of the birds and animals, and unselfishly control our actions accordingly.

Wildlife management in some form can be practiced by every landowner and sportsman in the state whether he be rich or poor, ambitious or lazy, retired or overworked. It will take the combined efforts of all people to increase wildlife in the wake of ever-encroaching civilization.

## Justus Cline, Conservation Leader, Dies



Photo courtesy of Waynesboro News-Virginian

Justus Henry Cline, 78, of Stuarts Draft, retired geologist, college and university professor, and "father" of Big Levels Game Refuge in the George Washington National Forest, died Monday, July 26, 1954, at the King's Daughters' Hospital, Staunton.

Born in Timberville on October 11, 1875, Dr. Cline was the son of the late John P. and Mary Ann Spittler Cline. He received his preparatory education in private and public schools of the area, having moved to Augusta County in early childhood. He received his Bachelor of Arts degree from Bridgewater College in 1899 and Masters' degree from Northwestern University in 1910. He completed his work for his Ph.D. degree in geology at the University of Virginia, while serving there as

assistant state geologist and adjunct professor of geology.

In 1917 Dr. Cline left the University of Virginia to enter professional work in geology.

On account of ill health, Dr. Cline retired in 1929 and returned to his home in Stuarts Draft.

Dr. Cline wrote and had published many papers on the geology of Virginia which are listed in the *Bibliography of Virginia Geology* by Rogers. He was also author of many other papers and addresses, and also Conservation Sermonettes.

During the years Dr. Cline was named to many fraternal orders and bestowed with many honors. He was an active member of the Virginia Academy of Science, and helped to promote the monograph, *The James River—Present, Past and Future*, published by the Academy. He was also a member of the Raven Society, Society of Sigma Xi, American Institute of Mining Engineers, American Association of Petroleum Geologists, and was given the honorary degree of doctor at Bridgewater College.

## What can we do?

It should be obvious, therefore, that the answer to "what we can do about it" is to conserve the surplus of runoff, which occurs during winter and spring, by means of sizable impoundments and reservoirs. Release from these reservoirs will provide much water during times of deficiency for municipal and industrial supplies, to a greater or lesser extent for irrigation (depending upon the size and availability of adequate impoundments) and for man's other uses. Along with this activity, in fact before, we should review our laws dealing with water (they are way out of date) and formulate new or revised laws which will make possible the sound and most beneficial use of our water resources. These two lines of endeavor will give rise to many difficult problems; there will be differences of opinion, some controversy over rights and the eventual question of allocation of water will cause much concern and probably much litigation. But the challenge is clear — *we must inventory more completely our resources and then take steps to protect by proper laws and to conserve by reducing loss and by storage during periods of plenty for times of deficiency.* The engineers, ground water geologists, chemists and other scientists and technical men can collect information, analyze the data and suggest solutions or design necessary structures but in the last analysis it is the people of Virginia who must become aware of the complications, complexities and variations in one of the most valuable resources we have and who, through an intelligent and purposeful public opinion, must take sound action.

## NATURALISTS (Continued from page 19)

desire to surpass the work of Scotch-born poet, peddler, and American ornithologist, Alexander Wilson (1766-1813).

Though the scope of Audubon's work was the whole of North America and he was but incidentally concerned with Virginia wildlife, he painted the birds, mammals, reptiles, and insects which inhabited the state and had first-hand knowledge of our living resources.

In 1840 Audubon began a journey from Newburyport, Massachusetts, down the coast to Richmond and into the Carolinas, soliciting subscriptions for his "Birds of America."

Returning to Virginia in July 1842, Audubon described his steamboat and coach trip to Petersburg and Richmond where he again put up at the Powhatan House. He collected some more subscription money and was excited over General Richardson's promise of some white turkeys.

Allowing for Catesby faults of drawing and clumsy nomenclature or the stiffness of Wilson or the tendency of Audubon to overdramatize, still these and the other early naturalists in America suffused with vigor and fresh air what had previously been museum studies of specimens in glass cases.

found in old fields in such amounts that it can be plowed out. Mandrake is a very common plant, and a big find means good money.

You may be surprised to know there are over four hundred different herbs and plants that have a commercial value and approximately two hundred species are in demand each year. Gathering plants are hundreds of full time people and thousands of part time men and boys, yet the field hasn't been scratched in Virginia. There are still vast amounts of herbs to be gathered throughout the entire state. Much herb gathering is also done in states west of Virginia and adjacent to the Mississippi River.

The term "herb" is used loosely. Actually any plant that has a medicinal value, be it herb, root, bulb, stem, bud, leaf, flower, fruit or bark can be classed as a botanical drug. Allow me to just mention twenty species out of hundreds that are common:

Balm of gilead buds	Boneset herb
Black cohosh root	Poke root
Chickweed herb	Indian turnip root
Yarrow herb	Skunk cabbage root
Sumac berries	Solomon seal root
Strawberry leaves	Wintergreen leaves
Blood root	Plantain leaves
Blue flag root	Black walnut leaves
Burdock seed	Catnip herb
Stinging nettle root	Dandelion root

Now don't dash right out and quit your job anticipating a quick fortune gathering botanicals. There's not that kind of money in it. But for a person willing to learn and put in some effort, and with a few lucky "strikes," it should be no hardship making a hundred or more dollars a year in spare time. And city people need not be excluded. There are plants galore close by any city. Write companies that buy herbs for price lists and get information on what they want. Find out what they want, and when, and dig just that. If you are making good profit on one botanical, don't try to dig several other kinds at the same time. It's possible to waste considerable time digging or harvesting plants that have no value. So be sure you can sell before you harvest. Try the company that buys herbs nearest your home first as distant shipping costs can cut your profit to zero. Don't be afraid to write them how they want the herbs prepared. And don't always try to procure high valued plants. Often plants with a nominal price but easy to procure in quantity will yield the greatest value. And read all you can about botanicals. After a lifetime at it you might possibly learn ten percent of what there is to know about them.

Well — that's it! The green gold awaits you! It may be just pin money for you, but better, the great outdoors. Be it romantic 'seng in lofty mountains or common poke along the backyard fence row, you have a thrill coming, sir! You'll feel like old Dan'l Boone himself when you've harvested your first botanical. I know! I did!

Mr. Watson is Assistant Ranger, Warm Springs Ranger District, George Washington National Forest.



### Virginia Resource Use Education Council Has Program

Word comes from P. H. DeHart, assistant director of the Virginia Extension Service of Virginia Polytechnic Institute, Blacksburg, that the Virginia Resource Use Education Council held its fall meeting on September 1st and 2nd at the Sunset Lodge below Suffolk. On September 2nd there was a field trip to the Great Dismal Swamp and Lake Drummond, courtesy of the Virginia Forest Service.

Representatives of all resource use agencies and the State Board of Education were on hand to discuss conservation education, according to Chairman DeHart.

### Boy Scout Conservation Council To Meet in Richmond

William C. Kellner, chief of the Special Services Section of the Commission, announces that November 9-14 the Robert E. Lee Council, Boy Scouts of America, will put on a big show in the State Armory at Richmond, with casting, safety and other demonstrations, exhibits by various state organizations and guest speakers.

### Clarke County Wildlife Group Opens Picnic Area

The Clarke County Wildlife Association has leased the strip of river bank near Castleman's Ferry which is known as the Willows and the area will be open to the public. The land has been cleared and picnic benches erected. There is space to launch and dock boats.

The action was taken because so many of the state waters in the section were becoming inaccessible as more and more river banks and shore lines were being leased and posted every year.

### All You Need To Know About 'Possums

Dr. Carl G. Hartman's book, *Possums*, published by the University of Texas Press in Austin, will tell you all you want to know—and maybe more—about our curious American marsupial.

Forty years of research on 'possums have gone into this book which includes life history and legends, recipes and even bedtime stories, complete with a gallery of illustrations, from old woodcuts to modern photography.



"You go out and disarm him and we'll do the rest."

### Plane Planting of Fingerlings

For the eighth year, the New Hampshire Fish and Game Department has planted brook and rainbow fingerlings by plane. The operation has proved very successful and much cheaper than planting remote ponds and lakes where jeep trips or back-packing put the fingerlings to a much greater strain.

Two plane stockings are scheduled annually, one in late spring and one in fall.

### Fish and Wildlife Policy on Game Fish Allotment

Walter A. Gresh, Regional Director of the United States Fish and Wildlife Service in Atlanta, has advised us that, after apportioning the output of the Federal Hatcheries for stocking waters on Federal lands or ponds and reservoirs constructed on private lands with Federal aid, or for stocking state waters open to public fishing, there are no surplus fish available for filling applications for private waters which are not open to the general public and which are not commercialized in any way.

However, upon request to the office of the Regional Director, the names and addresses of sources from which game fish may be purchased will be provided.

### Michigan Experiment Backs New York in Clearing Foxes

Last year New York's experiment to determine the effect of foxes on pheasants led to a conclusion that destruction of pheasants by that predator was negligible.

This year Michigan game workers have completed over 75 percent of a fox-trailing project begun in 1950. The plan is to follow fox trails 1,000 miles and to count the number of kills made by foxes. On 763 miles of fox trails, they found 1949 live pheasants and evidence that only 22 were killed by foxes.

### Texas Telephone Fishing

Trust Texas to be different—it only in the ingenuity of its fishing law violations.

Some of the heaviest fines this season have been for "telephone fishing," stunning fish with old fashioned hand-cranked telephone sets. The once standard magneto-equipped set shocks fish so they rise to the surface.

## Tax Deductions for Conservation

Digging a farm pond, leveling, grading, terracing, contour furrowing, construction of diversion channels, drainage ditches, building dams or planting windbreaks can pay off in reduced income taxes for farmers under the huge new tax revision law.

The law allows farmers to deduct from their incomes, on tax returns, many expenses for soil and water conservation. Although the deductions are limited in any one year to 25 percent of the taxpayer's gross income from farming, if more than 25 percent is spent in one year, it may be carried over and deducted on the following year.

However, anyone who has an income aside from farming, can't deduct 25 percent of his total income.

## Oak Wilt Research Pays Dividends

S. M. Nickey, Jr., Memphis lumberman and chairman of the National Oak Wilt Research Committee, reports on the dramatic development of experimental tests made during three years of intensive research by scientists in seven leading universities with funds of over \$140,000 provided by oak dependent industries.

Among the new control methods has been the use of chemicals applied to diseased areas by aerial spraying, or "bombing," or direct introduction into diseased trees. Removal and poisoning of diseased timber was also used. Some work was done with large plows to destroy root grafts which are believed in some cases to spread the disease.

It is expected that oak wilt disease, once the dreaded potential destroyer of America's two billion dollar oak forest resources, can be reduced from a menace to a nuisance by the control methods developed during the three-year research program.

The technical committee, headed by Dr. A. J. Riker, University of Wisconsin pathologist, has not yet released details of its chemical therapy methods because many of the chemicals are highly poisonous and not ready for use by the general public.

## Smokey Bear Program

Secretary of Agriculture Ezra T. Benson presented a bronze plaque to officials of the Association of State Foresters, the Advertising Council, and the U. S. Forest Service in recognition of the work which these organizations are doing through the nationwide Cooperative Forest Fire Prevention Program.

This presentation took place recently in Washington, D. C., at a meeting during which The Advertising Council presented the proposed Smokey Bear Forest Fire Prevention Program for 1955. (Mike Corcoran, Creative Director, and Richard Stow, Art Director, both of Foote, Cone & Belding's Los Angeles office made the actual presentation.)

Attending the meeting were representatives of the National Association of Manufacturers, American Forest Products Industries, American For-



U. S. Forest Service photo  
Secretary of Agriculture, Ezra T. Benson, presents plaque to officials. Richard E. McArdle, chief, U. S. Forest Service (right) looks on.

estry Association, Red Cross, Boy Scouts, Girl Scouts, National Board of Fire Underwriters, National Fire Protection Association, Sports Fishing Institute, National Wildlife Federation, Associated Tobacco Manufacturers, National Park Service, Bureau of Land Management, National Lumber Manufacturers Association, Society of American Foresters, National Commission on Safety Education, Institute of Life Insurance, Izaak Walton League, Saturday Evening Post, Columbia Broadcasting System, The White House, Forest Service, and State Foresters from North Carolina, Kentucky, and Colorado.

## Virginia Wildlife Federation Convention

Word from Fred Bell, president of

the Virginia Wildlife Federation, says that the 1954 annual convention of the Federation will be held at Narrows, Virginia, on October 9-10, 1954. An important conservation program has been planned.

The Virginia Wildlife Federation is one of the more recently organized state federations affiliated with the well-known National Wildlife Federation. The Virginia group now has more than 30 sportsmen's clubs in its federation and membership is steadily growing.

## The High Cost of Insect Damage and the Value of Songbirds

Government experts report losses in fruits, vegetables and grains from the ravages of insects, worms and beetles of more than \$100,000,000 annually in this country.

This emphasizes the value of insectivorous birds which help so significantly to hold these pests in check. Recognition of their economic importance has made protection an established policy backed by federal and state laws.

The National Wildlife Federation cautions that without birds agriculture would be next to impossible. For example, 66 species of birds are enemies of the cotton boll weevil, including the bobwhite quail, red-headed woodpecker, bluejay and the oriole.

## Indian Population of Virginia Increases

The Bureau of Indian Affairs reports that the sharpest increases in resident Indian population have occurred recently in Virginia, Ohio, Alabama and New Jersey. Statistics in the Bureau show that the country's heaviest concentration of Indian population is, of all places, in New York City, where there are 181.8 Indians per square mile.

During the fiscal year ending June 30, 1953, there were 100,883 Indian children between six and eighteen years of age enrolled in schools in the United States and Alaska. More than half were in public schools; the rest in federal, mission and other schools.



### Winners of Subscription Drive Announced

W. P. Blackwell, game technician of Orange, W. S. Rountree, game warden of Nansemond County, and J. J. Westbrook, of Sandston, special game warden of Henrico County, won trips to New Orleans to attend the convention of the Southeastern Association of Game and Fish Commissioners. The awards were made for obtaining the most subscriptions during the three-month subscription drive of VIRGINIA WILDLIFE.



Subscription drive winners (left to right) are: Shelton Rountree, William Blackwell, and J. J. Westbrook.

The three runners up were Game Warden Fred Brown of Fairfax County, Game Warden W. D. Hampton of Grayson County and State Game Technician H. J. Tuttle, of Toano.

Each of the runner-ups was presented a special sporting goods prize by the Izaak Walton League of America. Chapters making gift contributions were: Richmond chapter, a gift of field boots to Herman Tuttle; Fredericksburg-Rappahannock chapter, a fishing reel to Fred Brown; and Blacksburg chapter, a fishing reel to W. P. Hampton.

### Successful Game Warden School Held at V.P.I.

The annual Virginia Game Warden School was held at Virginia Polytechnic Institute in Blacksburg, August 15-19. Executive Director

I. T. Quinn of the Commission of Game and Inland Fisheries presided and gave a review of the Commission's activities for the past fiscal year.

Addresses during the Monday session were given by Dr. Louis A. Pardue, vice president, Virginia Polytechnic Institute; Honorable Holman Willis, member of the Commission, W. L. Joyce, attorney, of Stuart; John Findley, assistant chief, Wildlife Management, U. S. Fish and Wildlife Service; and Honorable Cecil E. Wright, Trial Justice, of New Castle. Dr. Henry S. Mosby, director, reported on the role of the V.P.I. Wildlife Research Unit in Virginia's wildlife program. G. B. P. Mullin, supervisor of the Jefferson National Forest and A. H. Anderson, supervisor of the George Washington National Forest, spoke on "Wildlife and the National Forests."

On Tuesday, a law enforcement question and answer panel was con-

More law enforcement problems were handled during the Wednesday session. There was a talk by Lieutenant C. W. Blue of the State Police in the afternoon. The annual convention of the Game Wardens' Association in the evening was presided over by Dave A. Robertson, president of the association, with John G. John, secretary.

The final session was devoted to reports from the various divisions of the Commission. Game Division problems were discussed by C. F. Phelps, chief, assisted by Ned Thornton, assistant chief, Kit Shaffer, Dick Cross and Stuart Davey. G. W. Bulter, chief of the Fish Division, Bob Martin, assistant chief and others reported on the fish division program. Education division activities were reported by J. J. Shomon, chief, assisted by Photographer Leon Kesteloo and special services officers Bill Kellner, Max Carpenter and Joe Coggin.

### Game Managers Hold School

The annual school for game managers on the George Washington National Forest was held at Camp Mae Flather on August 23rd and 24th.

Officials of the National Forest Service and the State Game Commission gave pertinent talks on the problems confronting the game managers.

A show me field trip to forest clearings, made for wildlife, concluded the school program.



Executive Director I. T. Quinn addresses field staff at the Game Warden School at V. P. I.

ducted by Webb Midyette, chief of the law enforcement division of the Commission, assisted by B. L. Bird, J. W. Francis, R. O. Halstead, C. L. Miller, I. H. Vassar, and M. E. Ware. In the afternoon there were programs conducted by A. H. Paessler, executive secretary of the State Water Control Board and J. W. Courtney, Jr., president of the Virginia Rifle and Pistol Association.



Game managers and officials at Camp Mae Flather, George Washington National Forest.

# Wildlife Questions and Answers

**Ques.:** Is it unlawful statewide to track animals in the snow during the hunting season?

**Ans.:** It is unlawful to hunt or track woodcock or non-migratory game birds or game animals in the snow, except that deer may be hunted statewide in the snow and bears, in the counties west of the Blue Ridge, either on or off one's own land. Landowners may kill rabbits in the snow on their lands for their own personal use and foxes may be hunted with dogs, but not with guns, in the snow.

**Ques.:** Is there any place left in the United States where there are enough buffalo for there to be an open season for hunting them today?

**Ans.:** According to the Wildlife Management Institute, for the first time in 69 years, buffalo will be hunted this fall on Montana's open range. The last kill of free-roaming buffalo in Idaho took place in 1884 when four were shot by Piegan Indians in the Sweet Grass Hills.

**Ques.:** Do trees and plants affect the weather in other ways than by providing shade?

**Ans.:** Yes, they do. Trees and other plants are "nature's humidifiers," according to the National Wildlife Federation. All water taken in by the roots and not needed is given off through the leaves into the atmosphere in a process which is called transpiration.

**Ques.:** What is the best way to keep fish in good condition until they can be refrigerated?

**Ans.:** Keep fish alive on a string in the water until ready to go home. Fish should be gutted immediately after being killed. At home, ice immediately and keep cold or frozen until ready to be cooked. In warm weather fish deteriorate at the rate of 20 percent every hour and fish dead five hours are unfit to eat if they have not been kept under proper conditions.

**Ques.:** Is there any way known of breaking fox hounds of running deer?

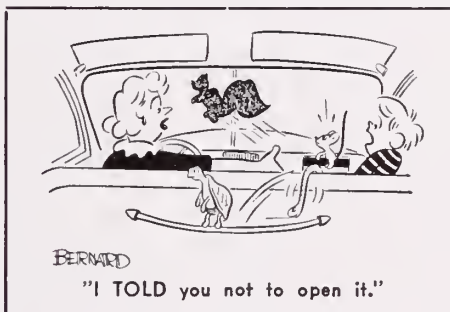
**Ans.:** Several remedies have been suggested, such as bringing up the hounds with goats, but none so far has proved generally effective. The problem is an old one in Virginia. George Washington referred to it a number of times in his diaries toward the close of the 18th century.

**Ques.:** Can you tell me some other breeds of dogs besides Great Danes and Scotties which are named for places?

**Ans.:** There are a great many breeds named for places including Afghans for Afghanistan; Airedales for the dale of Aire in Scotland; Dalmatians for Dalmatia on the Adriatic coast; Newfoundlanders for the British island, Pomeranians for Pomerania, a province of Prussia; Pekingese, or Pekinese, for Peking, China; Sealyham from the estate of a Welshman, Capt. Tucker-Edwards; Saluki from an ancient city in Arabia, Saluq; St. Bernard for the famed hospice in the Alps; Spaniel from a corruption of the French word meaning "Spanish."

**Ques.:** Does sumac offer any source of food for wildlife?

**Ans.:** Yes, the sumac fruit serves as food for birds, principally songbirds.



**Ques.:** What bird is meant by the "brown mockingbird"?

**Ans.:** The "brown mockingbird" is another name for the brown thrasher which, with catbirds and mockingbirds, belongs to the mimic thrush (*mimidae*) family. However, while the song of the thrasher and mockingbird resemble each other, the former commonly repeats each phrase of its song twice while the mockingbird usually repeats several times and its song is more varied, though the form is similar.

**Ques.:** Please explain the proper use of the terms "turtle," "terrapin" and "tortoise."

**Ans.:** The use of the terms in the United States is confusing and not as scientific as it is among the British. The tendency here is to call all chelonians "turtles," to refer to the marketable fresh-water species as "terrapins" and to call the strictly land forms, with stump-shaped hind legs, "tortoises."

**Ques.:** Do other Virginia animals besides skunks have disagreeable odors?

**Ans.:** Yes, many of the carnivores besides skunks have obnoxious odors, especially weasels and mink. An angered or excited weasel can give off an odor almost as offensive as a skunk.

**Ques.:** In olden days were there many wolves in Virginia?

**Ans.:** Yes, timber wolves were once abundant in the state and it is said the enterprising colonist in the 17th century could make a good living trapping wolves. In 1696 an entry in a court order book shows one payment of 1800 pounds of tobacco to Colonel William Byrd for seven wolves killed by men in his employ. Wolf bounties remained in force in the state until the wolves were exterminated.

**Ques.:** Are domestic turkeys descended from our native wild turkeys?

**Ans.:** No, our domestic species is a descendant of the Mexican turkey which was taken to Europe by the Spaniards in the early 16th century and from Spain continued its travels to England. English colonists brought it to the United States.

**Ques.:** How many poisonous snakes are there in the United States? Which ones are found in Virginia?

**Ans.:** There are 20 specifically different poisonous snakes in the United States which belong to four types: coral snakes, copperheads, water moccasins, and rattlesnakes. We do not have coral snakes in Virginia, but the other three types are found here.

**Ques.:** What is the origin of the word "salamander"?

**Ans.:** It goes back to the Greek word "salamandra," but its origin is obscure. The ancients believed that the scaleless lizardlike animals had the power to endure fire without harm.

**Ques.:** If the large male frog is called a bullfrog, what is the female called?

**Ans.:** "Bullfrog" refers to a specific species of large frog. The sex of the animal is not involved in the name, so the female is also a bullfrog.

**Ques.:** Is it true that deer shed their antlers every year? If so, why aren't more of them found in the woods?

**Ans.:** Yes, buck deer shed their antlers every year, usually during the late winter months. Most of them are destroyed quickly by small rodents for their mineral content.

**Ques.:** Are there other marsupials besides the Australian kangaroo and the American opossum?

**Ans.:** Yes, the koala bear and the Tasmanian wolf are other marsupials.



# 8<sup>th</sup> ANNUAL WILDLIFE Essay Contest

**\$1000<sup>00</sup>**  
in PRIZES

**One, 12th Grade, \$400 College Scholarship**

**SUBJECT:** Our Natural Resources (soil, waters, plants, wildlife) — Their influence on man.

**SPONSORED BY:** The Virginia Division of the Izaak Walton League of America and the Virginia Commission of Game and Inland Fisheries.

**APPROVED BY:** Virginia State Board of Education.

**DATE:** OCTOBER 1, 1954, to FEBRUARY 28, 1955.

## PRIZES

One 12th grade, college scholarship .....	\$ 400
Eight grand prize awards, \$50 each, one for each grade, totaling .....	\$ 400
Eight second prizes, \$25 each, one for each grade, totaling .....	\$ 200
Eight third prizes, \$15 each, one for each grade, totaling .....	\$ 120
Sixteen honorable mention prizes, \$10 each, two for each grade, totaling .....	\$ 160
Sixteen special mention prizes, \$5 each, two for each grade, totaling .....	\$ 80
One school prize .....	\$ 40
<b>Grand total .....</b>	<b>\$1,400</b>

There will be seven prizes in each of the eight competing grades. Scholarship winner, grand prize winners and winning school representative will come to Richmond as guests of the sponsors to receive their awards. Others will be given awards in the schools.

Two hundred certificates of merit also will be awarded in addition to the money grand prizes.

**ENDORSED BY:** Virginia Resource Use Education Council and Resource Use Committee, Virginia Academy of Science.

## CONTEST RULES

1. Students from all Virginia schools, grades 5-12 inclusive, are eligible.
2. Essays must be submitted through the schools participating. Schools to be eligible must send in an official entry card provided for the purpose.
3. Each essay submitted must bear the following information in the upper right hand corner: name, sex, age, grade, address, school, county, teacher.
4. Grand prize awards (\$50 awards only) cannot be given to winners two years in succession. Also, Commission employees and their families are not eligible.
5. Scholarship award good only in Virginia colleges and universities. Award to go to top 12th grade winner or next alternate.
6. Award to school to be made on basis of quantity and quality of essays submitted.
7. Final judging will be done by a panel of three judges — one from each sponsoring organization and one from the State Board of Education. Teachers are urged to indicate their choice of best essays, but to send in *all* their essays.
8. All essays **MUST** be mailed first class prepaid, to the Commission of Game and Inland Fisheries, Box 1642, Richmond 13, Virginia. Essays must be mailed and postmarked not later than February 28, 1955.